

Electrolyte membrane for fuel cells esp. for cars - comprises three-dimensional structure of crosslinked polymer, pref. PVA, contg. uniformly distributed polyelectrolyte

Patent number: DE4243600

Publication date: 1993-07-01

Inventor: NAKANO NOBORU (JP); AZUMA RYUJI (JP);
NAKASHIMA MOTOHIRO (JP); HORIGUCHI
MUNEHISA (JP)

Applicant: EQUOS RESEARCH KABUSHIKI KAISH (JP)

Classification:


- international: B01D71/32; B01D71/82; H01M8/02

- european: B01D67/00F10, B01D69/10, B01D69/14B, H01M8/02E2,
H01M8/10

Application number: DE19924243600 19921222

Priority number(s): JP19920167124 19920625; JP19910342554 19911225

Also published as:

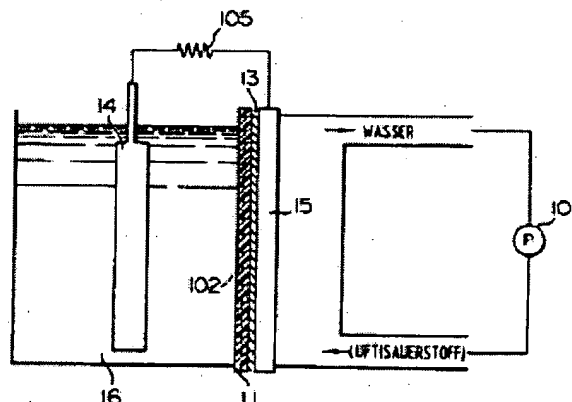
 US5409785 (A1)

Abstract of DE4243600

Electrolyte membrane (11) for a fuel cell comprises a 3-dimensional structure made up of bridging chains of water-stable polymer (I) and a polyelectrolyte (II), the 3-dimensional structure and the electrolyte being mainly uniformly distributed in the membrane.

Also claimed is a process for producing (11), by impregnating a porous support (102) with a compsn. contg. polymer (I) and a second polymer (II) which acts as the electrolyte for a fuel cell, and then crosslinking (I). Also claimed is a process for producing fuel cells, by forming a film of resin (107) on electrode (14) and also on electrode (15), impregnating support (102) and crosslinking as above to form membrane (11), placing (11) between the 2 films on (14) and (15) and hot-pressing the combination.

USE/ADVANTAGE - Fuel cells contg. (11) are useful, e.g. as power sources for cars. The invention provides a lowcost membrane which does not swell or dissolve in water, acts as an effective screen against methanol (in methanol cells), and has improved heat resistance and polyelectrolyte-electrode adhesion (w.r.t. prior-art membranes).



Data supplied from the esp@cenet database - Worldwide